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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,760	01/10/2002	Steven I. Ross	1280.2004-000 (LOT8-2001-	8358

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EXAMINER	
HARPER, V PAUL	

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/044,760	ROSS ET AL.	
	Examiner	Art Unit	
	V. Paul Harper	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3/26/02,4/01/03,. 8/02/04, 10/04/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The Examiner has considered the references listed in the Information Disclosure Statements dated 3/26/2002, 4/01/2003, 8/02/2004 and 10/04/2004 Copies of the Information Disclosure Statements is attached to this office action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 8-14, 16-22, and 24-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Abella et al. (U.S. Patent 6,044,347), hereinafter referred to as Abella.

Regarding **claim 1**, Abella discloses a method for object-oriented rule-based dialogue management (title). Abella's method includes the following steps:

- generating a goal derived from the utterance representation (col. 5, lines 19-24; col. 7, lines 35-60; col. 14, lines 22-25; applications such as making airline reservations, question-answering and robot control are inherently goal directed; also a request can be

interpreted as a goal (col. 2, lines 65-67); and the utterance is represented as a semantic tree (also referred to as an interpretation tree));

- analyzing the utterance representation based on the goal and a set of goal-directed rules to identify ambiguous information in the utterance representation (col. 8, lines 51-67; col. 9; lines 1-10; Fig. 3; frames and grammar (set of goal-directed rules) may include a semantics capability to build an interpretation tree for a given user request (utterance); col. 9, lines 40-44; analysis is performed by the dialogue manager during the creation of the interpretation tree and can handle ambiguous information); and
- generating a response based on the analysis of the utterance representation (col. 8, lines 1-21; Fig. 3; the dialogue manager **30** analyzes the interpretation tree **36** and sends a request to the application **34**).

Regarding **claim 2**, Abella teaches everything claimed, as applied above (see claim 1); in addition, Abella teaches "the step of analyzing the utterance representation comprises applying a goal-directed reasoning analysis based on the set of goal-directed rules to clarify the ambiguous information" (col. 8, lines 51-67; the dialogue manager uses frames and a grammar to analyze the utterance and build the interpretation tree, where the grammar can include semantic capability; col. 9, lines 25-67; the interpretation tree may need to be disambiguated and two procedures are illustrated; col. 16, lines 25-35; a script can be used to initiate questions that the user needs to answer to disambiguate a request).

Regarding **claim 3**, Abella teaches everything claimed, as applied above (see claim 2); in addition, Abella teaches "the step of analyzing the utterance representation comprises accessing data in a conversational record of related utterances to clarify the ambiguous information" (col. 15, line 53 through col. 16, line 25; the knowledge stack contains the interpretation trees provided [from previous utterances (a conversational record)] and is used to generate questions [during disambiguation]).

Regarding **claim 4**, Abella teaches everything claimed, as applied above (see claim 2); in addition, Abella teaches "the step of generating the response comprises generating a question directed to a provider of the utterance representation to clarify the ambiguous information, the question emerging from the analyzing of the utterance representation and requesting further information from the provider (col. 12, lines 64-66; solicits information from the user to clarify the ambiguity).

Regarding **claim 5**, Abella teaches everything claimed, as applied above (see claim 1); in addition, Abella teaches "the step of generating the response comprises generating the computer application program command based on the utterance representation and based on the analysis of the ambiguous information" (col. 17, lines 6-25; the dialog manager **30** processes the semantic representation **36** and sends the request on to an application **34**, e.g., a query to a database, the semantic representation can be ambiguous).

Regarding **claim 6**, Abella teaches everything claimed, as applied above (see claim 1); in addition; Abella teaches "the utterance representation is based on a set of propositions, each proposition comprising an attribute, an object, and a value" (col. 9, lines 25-45; Fig. 4, the interpretation tree (utterance representation) is based on nodes consisting of attribute, object, and a value corresponding (for example) to **PERSON, NAME = BURT LANDCASTER**).

Regarding **claim 8**, Abella teaches everything claimed, as applied above (see claim 1); in addition; Abella teaches "the response is a computer application program command based on the utterance representation" (col. 17, lines 5-10; request is sent to the application interface, e.g., a query to a database).

Regarding **claim 9**, Abella discloses a system for object-oriented rule-based dialogue management (title). Abella's system includes the following:

- a database storing a set of goal-directed rules (col. 8, lines 51-67; col. 9, lines 1-10; Fig. 3; the dialogue manager is supplied with frames and a grammar that will inherently be stored in memory and accessed depending upon the goal (e.g., Fig. 3, **CAR RENTAL** has the goal of renting a car and accesses the corresponding data structure—a database).
- a digital processor coupled to the database, the digital processor hosting and executing a reasoning facility that is configured to (Fig. 1, items 16 and 18; col. 4, lines

45-57; converted speech signal is supplied to a processor for dialogue processing techniques described):

- generate a goal derived from the utterance representation (col. 5, lines 19-24; col. 7, lines 35-60; col. 14, lines 22-25; applications such as making airline reservations, question-answering and robot control are inherently goal directed; also a request can be interpreted as a goal (col. 2, lines 65-67); and the utterance is represented as a semantic tree (also referred to as an interpretation tree));
- analyze the utterance representation based on the goal and the set of goal-directed rules in the database to identify ambiguous information in the utterance representation (col. 8, lines 51-67; the frames and a grammar (set of goal-directed rules) may include a semantics capability to build an interpretation tree for a given user request (utterance); col. 9, lines 40-44; analysis is performed by the dialogue manager during the creation of the interpretation tree and can handle ambiguous information); and
- generate a response based on the analysis of the utterance representation (col. 8, lines 1-21; Fig. 3; the dialogue manager **30** analyzes the interpretation tree **36** and sends a request to the application **34**).

Regarding **claim 10**, this claim has limitations similar to those of claim 2 and is rejected for the same reasons.

Regarding **claim 11**, this claim has limitations similar to those of claim 3 and is rejected for the same reasons.

Regarding **claim 12**, this claim has limitations similar to those of claim 4 and is rejected for the same reasons.

Regarding **claim 13**, this claim has limitations similar to those of claim 5 and is rejected for the same reasons.

Regarding **claim 14**, this claim has limitations similar to those of claim 6 and is rejected for the same reasons.

Regarding **claim 16**, this claim has limitations similar to those in claim 8 and is rejected for the same reasons.

Regarding **claim 17**, this claim is a computer program product description of the invention where Abella teaches that the invention may be implemented in the form of a computer software program stored in memory (col. 4, lines 58-60); furthermore, this claim has limitations similar to those in claims 1 and 9 and is rejected for the same reasons.

Regarding **claim 18**, this claim has limitations similar to those found in claim 2 and is rejected for the same reasons.

Regarding **claim 19**, this claim has limitations similar to those found in claim 3 and is rejected for the same reasons.

Regarding **claim 20**, this claim has limitations similar to those found in claim 4 and is rejected for the same reasons.

Regarding **claim 21**, this claim has limitations similar to those found in claim 5 and is rejected for the same reasons.

Regarding **claim 22**, this claim has limitations similar to those found in claim 6 and is rejected for the same reasons.

Regarding **claim 24**, this claim has limitations similar to those found in claim 8 and is rejected for the same reasons.

Regarding **claim 25**, this claim has limitations similar to those found in claims 1 and 9 and is rejected for the same reasons.

Regarding **claim 26**, this claim is computer program propagated signal product description of the invention where Abella teaches that the invention may be implemented in the form of a computer software program stored in memory with the program having the inherent ability of being propagated (col. 4, lines 58-60); furthermore, this claim has limitations similar to those in claims 1 and 9 and is rejected for the same reasons.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 7, 15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abella in view of McGlashan ("Towards Multimodal Dialogue Management" Proceedings of the Twente Workshop on Language Technology, 1996).

Regarding **claim 7**, Abella teaches everything claimed, as applied above (see claim 1). But Abella does not specifically teach "each goal-directed rule comprises a set of conditions and a set of actions, each condition consisting of a first proposition or a first script command and each action consisting of a second proposition or a second script command." However, the examiner contends that this concept was well known in the art, as taught by McGlashan.

In the same field of endeavor, McGlashan teaches a technique for dialogue management where each rule maps from a function to a set or actions and a set of conditions, and each action could be described as a command (e.g., pop) and each condition could be described as a proposition (e.g., type=close) (p. 6, top of 1st column, Table 4).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Abella by specifically providing the technique, as taught by McGlashan, because it is well known in the art at the time of invention as a straightforward way to modify dialog behavior (McGlashan, p. 6, last paragraph in the 1st column).

Regarding **claim 15**, this claim has limitations similar to those of claim 7 and is rejected for the same reasons.

Regarding **claim 23**, this claim has limitations similar to those of claim 7 and is rejected for the same reasons.

Citation of Pertinent Art

4. The following prior art made of record but not relied upon is considered pertinent to the applicant's disclosure:

- Strong (U.S. Patent 5,390,279) teaches the partitioning of speech recognition rules using context.

- Zadronzy et al (U.S. Patent 5,937,385) teach a method for creating speech recognition grammars constrained by counter examples.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. V. Paul Harper whose telephone number is 703 305-4197. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 703 305-9645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

V. Paul Harper 12/16/04

V. Paul Harper
Examiner
Art Unit 2654